



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/600,757 | 06/23/2003 | Byeong Koo Kim | 8733.842.00 | 5730 |

30827 7590 02/22/2006

MCKENNA LONG & ALDRIDGE LLP
1900 K STREET, NW
WASHINGTON, DC 20006

| |
|----------|
| EXAMINER |
|----------|

VU, PHU

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2871

DATE MAILED: 02/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/600,757

Applicant(s)

KIM ET AL.

Examiner

Phu Vu

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/7/2005.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 13-25, 30-34 is/are rejected.
- 7) ☒ Claim(s) 9-12 and 26-29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1-3 and 18-20 rejected under 35 U.S.C. 102(b) as being anticipated by Wu 6175394.

Regarding claims 1 and 18, Wu teaches an LCD comprising: a picture display part having a plurality of liquid crystal cells, a signal pad part for applying a driving signal to be inputted to signal lines of the picture display part, wherein the signal pad part includes: a plurality of pads (fig. 10 112) connected to respective ones of the signal lines, a static electricity prevention circuit (50) having a TFT with a floating gate for connecting at least one of the said pads with an equipotential line (132) in the presence of static electricity, wherein the equipotential line is disposed at an outer portion between an outer portion of the liquid crystal and the signal pad part.

Regarding claim 2 and 19, the reference teaches a TFT with a floating gate connecting a signal pad part to the equipotential line which is considered the

Art Unit: 2871

structure/step necessary to insulate the equipotential line and other pads from the driving signal as this is what appears to be necessary in the claimed invention.

Regarding claims 3 and 20, the reference teaches the static electricity prevention circuit, further comprising: a first capacitor connected between the floating gate and a first terminal of the TFT connected to the TFT and a second capacitor connected between the floating gate and a second terminal of the TFT transistor connected to one of the said pads (see fig. 1 element C1 and C2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4-8, 16-17, 21-25, and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu US 6175394 in view of Applicant's Admitted Prior Art (AAPA) 20040032544.

Regarding claims 4, 7, 21 and 24, Wu teaches all the limitations of claim 4 and 7 except a second static electricity prevention circuit formed between one of said pads and a first drive supply voltage line and a second drive voltage line for bypassing the static electricity flowing from one of the said pads into at least one of the first and second drive voltage supply lines. Applicant discloses, through admitted prior art, that it is known in the art to form a static electricity prevention circuit formed between one of said pads and a first drive supply voltage line and a second drive voltage line for

Art Unit: 2871

bypassing the static electricity flowing from one of the said pads into at least one of the first and second drive voltage supply lines to protect the picture display part in the liquid crystal from static electricity [0017]. Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to provide a second static electricity prevention circuit to further protect the picture display part in the liquid crystal from static electricity. Regarding claims 21 and 24, the resulting structure will have a pad connected to a node between the static electricity prevention circuit and the picture display part.

Regarding claims 8 and 25, Wu teaches an LCD comprising: a picture display part having a plurality of liquid crystal cells, a signal pad part for applying a driving signal to be inputted to signal lines of the picture display part, wherein the signal pad part includes: a plurality of pads (fig. 10 112) connected to respective ones of the signal lines, a static electricity prevention circuit (50) having a TFT with a floating gate for connecting at least one of the said pads with an equipotential line (132) in the presence of static electricity, wherein the equipotential line is disposed at an outer portion between an outer portion of the liquid crystal and the signal pad part. The reference also teaches a first link line (between 50 and 112) connecting to the first static electricity prevention circuit (50) to the pad. Wu teaches all the limitations of claim 4 except a second static electricity prevention circuit connected to the pads through a second link line. However applicant discloses, through admitted prior art, that it is known in the art to form a static electricity prevention circuit formed between one of said pads and a first drive supply voltage line and a second drive voltage line for bypassing the static

Art Unit: 2871

electricity flowing from one of the said pads into at least one of the first and second drive voltage supply lines to protect the picture display part in the liquid crystal from static electricity [0017]. This is located on pixel electrode side of the pads therefore, it is connected to the pad through a second link line. Therefore, at the time of the invention it would have obvious to one of ordinary skill in the art to apply a second link line connecting a second static electricity prevention circuit to further protect the display part from static electricity.

Regarding claims 5-6 and 22-23, Wu discloses a link line wherein the link line has a first portion (portion between 50 and 132 nearest to equipotential line) between a grinding line and equipotential line (132) and second portion (portion between 50 and 132 nearest to static electricity prevention circuit) between the grinding line and static electricity prevention circuit.

Regarding claims 15 and 32, Wu discloses all the limitations of claims 15 and 32 except at least one resistor connected between one of said pads and the equipotential line.

Regarding claims 16-17 and 33-34, Wu teaches an LCD with a link pad part having a plurality of link pads that connect the signal lines of the display part with a drive circuit. Wu does not disclose a separate test pad part having a plurality of test pads connected to the display part however, AAPA teaches test pads dedicated to application of test signals connected to the signal lines of the display part to perform a light up test to in order to detect the presence of defects [0010]. Therefore, it would have been

obvious to one of ordinary skill in the art to apply test pads in order to enable an additional testing method to detect the presence of defects.

Claims 8, 13-14 and 30-31 rejected under 35 U.S.C. 103(a) as being unpatentable over Wu in view AAPA in further view of Ha US Pub. No. 2002/0057392.

Regarding claims 8, 13-14, and 30-31, Wu discloses all the limitations of claims 8, 13-14 and 30-31, except a resistor connected between the static electricity prevention circuit and the picture display part for limiting current. Ha discloses a resistor between the static electricity prevention circuit and picture display part (see figure 4. elements R1 and R2) to prevent distortion of the signals (see [0046]). Therefore at the time of the invention it would have been obvious to one of ordinary skill in the art to add resistors between the static electricity prevention circuit and picture display part to prevent distortion on the gate, data or input signal lines.

Claims 15 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu in view of Kim US Patent 6072550.

Regarding claims 15 and 32, Wu discloses all the limitations of claim 15 and 32 except, at least one resistor connecting one of said pads to the equipotential line. Kim discloses a resistor connecting and input pad (element 13) to the equipotential line (element 20) to limit current flowing into the equipotential line (discharge bus) (column 7 lines 62-67) to allow eliminate the need for the equipotential line to be separated during testing. Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to connect a resistor between the equipotential line to a pad

Art Unit: 2871

because this will reduce current flowing through the equipotential line and eliminate the need for separation of the equipotential line during testing.

Allowable Subject Matter

Claims 9-12, 26-28 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: There is prior art of record teaches a display with picture display part having a plurality of liquid crystal cells; a signal pad part having a plurality of liquid crystal cells; a signal pad part for applying a driving signal to be inputted to signal lines of the picture display part, wherein the signal pad part includes: a plurality of pads connected to respective ones of the signal lines; a static electricity prevention circuit having a TFT with a floating gate for connected at least one of said pads with an equipotential line in the presence of static electricity, wherein the equipotential line is disposed at the outer portion from the signal pad part; a second static electricity prevention circuit formed between one of said pads and a first drive voltage supply line and a second drive voltage supply line for bypassing the static electricity flowing from one of said pads into at least of the first and second drive voltage supply lines, wherein one of said pads is connected to the static electricity prevention circuit through first link line and a second static electricity prevention circuit connected through a second link line. However the prior art fails to teach these limitations with the addition of the first link line and second

line lines having a first portion between a grinding line and an equipotential line nor one of the pads electrically separated from the static electricity prevention circuit, the second circuit static electricity prevention circuit and the signal lines of the picture display part by the grinding process in which the equipotential line is remove. The prior art teaches separation of the equipotential line from the test pads thus does not include any portion of the second link line between the grinding line and equipotential line and does not teach the pads electrically separated from the static electricity separated from the second static electricity prevention circuit and signal lines of the picture display part.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phu Vu whose telephone number is (571)-272-1562. The examiner can normally be reached on 8AM-5PM M-F.

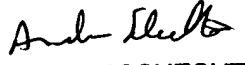
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571)-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 10/600,757
Art Unit: 2871

Page 9

Phu Vu
Examiner
AU 2871


ANDREW SCHECHTER
PRIMARY EXAMINER